

REMARK

Applicant respectfully requests reconsideration of this application as amended. Claims 1 and 5-19 and 23-32 remain in the application. Claims 1, 15 and 19 have been amended. Claims 2-4 and 20-22 have been cancelled without prejudice. No claims have been added.

Rejections under 35 U.S.C. § 102(e)

Applicant's claims 1 and 19 have been rejected under 102(e) as being anticipated by Bromley, US Patent No. 6,658,021. Applicant does not admit that Bromley is prior art and reserves the right to swear behind the reference at a later date. Nonetheless, Applicant respectfully submits that Bromley does not disclose each and every element of the invention as claimed in claims 1 and 19.

Bromley discloses receiving an encapsulated data packet on an input line card, deencapsulating the data packet, forwarding the data packet to the correct output line card and re-encapsulating the data packet based on the method of transmitting the data packet. Deencapsulation and encapsulation occurs on a per virtual circuit basis (Bromley, Col. 3, lines 59-62). Protocols supported for deencapsulation and encapsulation are SONET, ATM, Frame Relay, PPP and IP. Data packets with Ethernet-based encapsulations, such as Internet Protocol over Ethernet (IPoE) and Point-to-Point Protocol over Ethernet (PPPoE), are not disclosed.

Applicant respectfully submits that Bromley does teach or suggest Applicant's claim as amended. Bromley discloses non-Ethernet based encapsulated data packets on a number of virtual circuits. However, Bromley does not teach or suggest IPoE or PPPoE encapsulated data

packets. Furthermore, Bromley does not teach or disclose both a real circuit of IP over Ethernet and a number of virtual circuits of IP over Point-to-Point Protocol over Ethernet within that real circuit.

In claims 1 and 19, as amended, Applicant's claims are directed to receiving IPoE encapsulated data packets on a real circuit and receiving IP over PPPoE encapsulated data packets on a number of virtual circuits, where the number of virtual circuits are within the real circuit. For instance, claims 1 and 19 require "receiving a number of Internet Protocol (IP) packets on a real circuit and a number of virtual circuits, wherein the number of virtual circuits are within the real circuit such that the number of Internet Protocol (IP) packets on the real circuit have an IP over Ethernet encapsulation and the number of Internet Protocol (IP) packets on the number of virtual circuits have a Point-to-Point Protocol over Ethernet encapsulation".

The above quoted limitations are not described or suggested by Bromley. While there are various uses for the invention as claimed, several such uses are discussed at page 4, lines 2 – 14 and page 8, line 4 – page 11, line 14. Thus, while the invention is not limited to the uses discussed on these pages, it should be understood that Bromley does not enable these uses and the above quoted limitations do.

For at least these reasons, Applicant respectfully submits that independent claims 1 and 19 are allowable.

Rejections under 35 U.S.C. § 103(a)

Applicant's claims 5-18 and 23-32 have been rejected under 103(a) as being obvious over Bromley in view of Voit, US Patent No. 6,424,657. Similar to Bromley, Voit would only qualify

as prior art only under 35 U.S.C. § 102(e). Applicant does not admit that Voit is prior art and reserves the right to swear behind the reference at a later date. Nonetheless, Applicant respectfully submits that the combination is improperly motivated and furthermore does not teach each and every element of the invention as claimed in claims 5-18 and 23-32.

Voit discloses a switch capable of examining and selectively forwarding packets based on higher layer information in the protocol stack. The switch enables segregation of upstream traffic by Ethernet type and downstream aggregation of Internet traffic with traffic from a local vertical services domain. The switch determines how to selectively forward upstream PPPoE and non-PPPoE data packets based on the Ethertype information contained in the Ethernet frame header (Voit, Col. 19, lines 39-53), not based on the address stored in the number of IP data packets. Voit's switch forwards all PPPoE traffic to the ISP while sending all other Ethernet traffic to the vertical services domain (Voit, Col. 15, lines 50-57, Figure 2: ISP #11, Virtual Service Domain #13).

The Examiner asserts that the motivation for the combination is to incorporate higher data rates. However, the Examiner has not stated how adding the switch for IPoE and PPPoE protocols as disclosed in Voit would allow incorporation of higher data rates for a SONET-based system as disclosed by Bromley. IPoE and PPPoE protocols describe how data packets are formed, not at what rate the data packets are transmitted. Furthermore, Voit's switch is co-located with the DSLAM, which are located in the central office (Voit, Figure 7, DSLAM #111, Central Office #100). In contrast, Bromley's switch uses SONET OC-48 connections. Such connections are known one skilled in the art to be very high-speed connections that are used for metro core devices, such as in a publicly switched packet Internet (Voit, Figure 7, #132). Thus,

the switches described in Bromley and in Voit are used in two different segments of a metro area network and it is not obvious to combine a metro core switch with a central office switch.

Therefore, Applicant respectfully submits that the combination is improper for lack of appropriate motivation.

Nevertheless, even assuming the combination is proper, Applicant respectfully submits that the combination of Bromley's switch (Bromley, Col. 3, line 59 – Col. 4, line 3) with Voit's switching of IPoE and PPPoE would not teach Applicant's invention as claimed in claims 5-18 and 23-32. The combination would have Bromley's switch (Bromley, Col. 3, line 59 – Col. 4, line 3) with the function of Voit's switch that forwards all IP over PPPoE data packets to the ISP and forwards all IPoE packets to the vertical services domain. However, this is not what is claimed in Applicant's claims.

Applicant's claims 5, 10, 15, 23 and 28 are directed to receiving IP packets over Ethernet on a real circuit and receiving IP packets within Point-to-Point over Ethernet on a virtual circuit, where the virtual circuit is within the real circuit. Furthermore, IP packets are forwarded based on the IP address stored in the IP packet. Finally, in claims 5, 10, 23 and 28, the Ethernet headers from each of the IPoE and PPPoE data packets are removed, as is the PPPoE header from the PPPoE data packets.

For instance, claims 5 and 23 require "receiving a number of Internet Protocol (IP) packets over Ethernet on a real circuit ... removing the Ethernet header from the number of IP packets ... receiving a number of IP packets within a Point-to-Point Protocol (PPP) over Ethernet on at least one virtual circuit ... wherein the at least one virtual circuit runs within the real circuit ... removing the PPP header and the PPPoE header from the number of IP packets within the

PPP over Ethernet ... removing the Ethernet header from the number of IP packets within the
PPP over Ethernet ... forwarding the number of IP packets over Ethernet and the number of IP
packets within PPP over Ethernet based on the IP address".

As another example, claims 10 and 28 requires "receiving a number of different data packets over Ethernet on both a real circuit and a number of virtual circuits running within the real circuit ... upon determining that a received data packet is an Internet Protocol (IP) packet over Ethernet on the real circuit, removing an Ethernet header from the received data packet and forwarding the IP packet based on an IP address stored in the IP packet ... upon determining that a received data packet is an IP packet within a Point-to-Point Protocol (PPP) over Ethernet on one of the number of virtual circuits, removing an Ethernet header, a PPP header and a PPP over Ethernet (PPPoE) header from the data packet and forwarding the IP packet based on an IP address stored in the IP packet".

Finally, claim 15 requires "each of the number of real circuits include at least one virtual circuit, the number of I/O cards to receive a number of Internet Protocol (IP) packets over Ethernet on the real circuit and to receive a number of IP packets within a Point-to-Point Protocol (PPP) over Ethernet on the at least one virtual circuit ... a forwarding card having an IP address table, the forwarding card to receive the number of IP packets from the number of I/O cards and to forward the IP packets based on the IP address table".

The above quoted limitations are not described or suggested by the combination. While there are various uses for the invention as claimed, several such uses are discussed at page 8, line 4 – page 11, line 14. Thus, while the invention is not limited to the uses discussed on these

pages, it should be understood that the combination of Bromley and Voit does not enable these uses and the above quoted limitations do.

For at least these reasons, Applicant respectfully submits that independent claims 5, 10, 15, 23 and 28 are allowable. The Applicant respectfully submits that dependant claims 6-9, 11-14, 16-18, 24-27 and 32 are allowable for at least the reason that they are dependent on an allowable independent claim.

Information Disclosure Statement

Applicant is submitting herewith a PTO-1449 form and associated references, Applicant wishes to draw the Examiner's attention to certain of these references. In particular, Applicant submits manuals for releases 2.3 and 3.1 of the Patent Owner's products to indicate the added features. Applicant respectfully submits that Release 2.3 (Access Operating System (AOS) Configuration Guide Release 2.3) qualifies as prior art published more that one year before the filing date of this application, whereas Release 3.1 (release notes for Redback AOS Release 3.1.4; Access Operating System (AOS) Configuration Guide Release 3.1; and Access Operating System (AOS) Command Reference) does not and the description of the claimed invention contained therein is attributable to the inventors of this application.

Page 9 of the release notes for Redback AOS Release 3.1.4 shows "multiple encapsulations per circuit" as a new feature. There is no such feature listed in Redback AOS Release 2.3.

Conclusion

Applicant respectfully submits that the rejections have been overcome by the amendments and remarks, and that the Claims as amended are now in condition for allowance. Accordingly, Applicant respectfully requests the rejections be withdrawn and the Claims as amended be allowed.

Invitation for a telephone interview

The Examiner is invited to call the undersigned at 408-720-8300 if there remains any issue with allowance of this case.

Charge our Deposit Account

Please charge any shortage to our Deposit Account No. 02-2666.

Respectfully submitted,

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